

Direct and Inverse Variation

Chapter 10: Direct and Inverse Variation · Topic 1

Key Concept

In direct variation, $y = kx$ (where k is a constant), meaning if x doubles, y also doubles, like distance and time at constant speed.

In inverse variation, $y = k/x$, meaning if x doubles, y halves, like speed and time for a fixed distance.

We identify the type of variation by observing how quantities change together in a given problem or dataset.

Understanding variation helps us model and solve real-world problems involving proportional relationships between quantities.

Quick Revision Notes

- Direct variation: $y = kx$.
- If x doubles, y doubles too.
- Example: distance and time at constant speed.
- Inverse variation: $y = k/x$.
- If x doubles, y halves.
- Example: speed and time for fixed distance.
- We identify variation type from how quantities change.
- Variation helps model real-world proportional relationships.

Practice Questions

- 1 Identify if $y=5x$ is direct or inverse variation.
- 2 Identify if $y=10/x$ is direct or inverse variation.
- 3 Give a real-life example of direct variation.
- 4 Give a real-life example of inverse variation.
- 5 Solve a direct variation problem.
- 6 Solve an inverse variation problem.